

#### ABSTRACT OF THE DISCLOSURE

The present invention discloses an interferometer optical switch that can carry out switching over a broad band and has a high extinction ratio and large fabrication tolerance. The interferometer optical switch employs a phase generating coupler, the phase difference of the output of which has wavelength dependence, as at least one of the optical multi/demultiplexing device included in the interferometer optical switch. A wavelength insensitive interferometer optical switch is implemented by making the sum  $2\pi\{\phi_1(\lambda) + \phi\Delta_L(\lambda) + \phi_2(\lambda)\}$  constant regardless of the wavelength, where  $\phi_1(\lambda)$  is the phase produced by the first optical multi/demultiplexing device,  $2\pi\phi\Delta_L(\lambda)$  is the phase difference of the optical delay line with an optical path length difference of  $\Delta L$ , and  $2\pi\phi_2(\lambda)$  is the phase produced by the second optical multi/demultiplexing device.

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